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U.S. Serial No.: 10/522,870

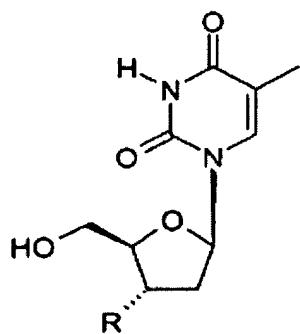
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Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method for diagnosis or monitoring the progression of cancer or tumors in a subject determining thymidine kinase 1 activity in a human or animal body fluid or cell or tissue sample, comprising the steps of reacting a human or animal body fluid or cell or tissue sample said sample with a substrate for said thymidine kinase 1 which substrate is a 3'-derivative of thymidine in the presence of a phosphate donor and a buffer system and determining the amount of 5'-phosphorylated 3'-derivative of thymidine formed, said amount being related to said progression of cancer or tumors-thymidine kinase 1 activity.
2. (currently amended) A method according to claim 1, wherein a substrate for TK1 is a 3'-deoxy-thymidine derivative of formula I



in which R is selected from ~~but not~~
~~limited to~~ the group consisting of NH₂, NHCOCH₃, SC₂H₅, OBn,
N₃, NO₂, OCOCH₃, OSO₂CH₃ and F.

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3. (previously presented) A method according to claim 1, wherein the 3'-derivative of thymidine is AZT and the 5'-phosphorylated 3'-derivative of thymidine is AZTMP.
4. (previously presented) A method according to claim 1, wherein the amount of said 5'-phosphorylated 3'-derivative of thymidine formed is determined by an immunological method comprising reacting the 5'-phosphorylated 3'-derivative of thymidine formed with at least one antibody capable of selectively reacting with the 5'-phosphorylated 3'-derivative of thymidine to form immunocomplexes.
5. (original) A method according to claim 4, wherein the amount of 5'-phosphorylated 3'-derivative of thymidine is determined by an immunological method using chemiluminescence.
6. (previously presented) A method according to claim 4, wherein the amount of said 5'-phosphorylated 3'-derivative of thymidine formed is determined by enzyme linked immunosorbent assay (ELISA).
7. (previously presented) A method according to claim 1, wherein said buffer comprises at least Dithioerythritol (DTE), ATP, MgCl₂ and HEPES or Tris and provides a pH from 6.5 to 8.0.
8. (previously presented) A method according to claim 1, wherein Uridine monophosphate (UMP) is contained in said buffer.

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9. (previously presented) A method according to claim 1, wherein said substrate is present in a concentration of at least 0.4 mM.

10. (previously presented) A method according to claim 1, wherein said phosphate donor is present in a concentration of 0.1 - 10 mM.

11-12. (cancelled)

13. (currently amended) The method according to claim 1 ~~12~~, wherein the cancer is haematological cancer, breast cancer, gastrointestinal cancer, or prostate cancer.

14. (currently amended) The method according to claim 1 ~~13~~, wherein the condition is a high risk of disease progression in non-Hodgkin's lymphoma or chronic lymphocytic leukaemia.

15. (previously presented) An in vitro method for diagnosing or therapeutic monitoring of diseases in a human or animal characterized by elevated levels of thymidine kinase 1 activity, comprising the steps of

- a) obtaining a sample of human or animal body fluid or a cell or tissue sample;
- b) assaying the sample to determine the thymidine kinase 1 activity according to the method of claim 1; and
- c) relating the amount of thymidine kinase 1 activity to the clinical status of the human or animal.

16. (previously presented) A kit for the in vitro diagnosis or therapeutic monitoring of diseases in a human or animal

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characterized by elevated levels of thymidine kinase 1 activity, comprising

- a) a 3'-derivative of thymidine;
- b) a phosphate donor;
- c) a buffer; and
- d) at least one antibody capable of selectively reacting with the 5'-phosphorylated 3'-derivative of thymidine.

17. (original) A kit according to claim 16, wherein the 3'-derivative of thymidine is AZT and wherein the 5'-phosphorylated 3'-derivative of thymidine is AZTMP.

18. (previously presented) A kit according to claim 16, further comprising UMP.

19. (previously presented) A kit according to claim 16, wherein the reagents are packed together in a container.

20. (previously presented) A kit according to claim 17, further comprising UMP.